

- Howell, S. N. G. & Webb, S. 1992. New and noteworthy bird records from Guatemala and Honduras. *Bull. Brit. Orn. Cl.* 112: 42–49.
- Howell, S. N. G. & Webb, S. 1995. *Birds of Mexico and Northern Central America*. Oxford University Press.
- Marcus, M. J. 1983. Additions to the avifauna of Honduras. *Auk* 100: 621–629.
- Monroe, B. L., Jr. 1968. A distributional survey of the birds of Honduras. *Orn. Monogr.* no. 7, A.O.U.
- Ridgely, R. S. & Gwynne, J. A. 1989. *A guide to the birds of Panama*, 2nd edn. Princeton Univ. Press.
- Stiles, R. G. & Skutch, A. F. 1989. *A guide to the birds of Costa Rica*. Cornell Univ. Press.
- Thurber, W. A., Serrano, J. F., Sermeño, A. & Benítez, M. 1987. Status of uncommon and previously unreported birds of El Salvador. *Proc. Western Found. Vert. Zool.* 3: 109–293.
- Wege, D. C. & Long, A. J. 1995. Key areas for threatened birds in the neotropics. *BirdLife Conservation Series* no. 5. Burlington Press, Cambridge.

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## A new plumage of the White-winged Nightjar *Caprimulgus candicans* (Aves: Caprimulgidae)

by Bernabé López Lanús, Robert P. Clay &  
James C. Lowen

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The White-winged Nightjar *Caprimulgus candicans* is one of the least known caprimulgids in the Americas (Collar *et al.*, 1992, Lowen *et al.*, 1996b) and is considered Critically Endangered (Collar *et al.*, 1994). It is known from two specimens collected in the *cerrado* of central Brazil: one at Irisinga, São Paulo, on 6 January 1823 (not February as in Collar *et al.*, 1992), and the other at Cuyoba, Mato Grosso, in either December 1823 or June 1825 (both dates on label; N. Cleere *in litt.* 1997). There is older evidence from Paraguay (de Azara 1802–05), but without details of date or locality. Subsequent records have come from only three widely spaced sites: Emas National Park, Goiás state, Brazil (Collar *et al.*, 1992), Beni Biological Station, Yucuma province, Bolivia (Davis & Flores 1994), and Reserva Natural del Bosque Mbaracayú (RNBM), Canindeyú department, Paraguay (Lowen *et al.*, 1996b, 1997).

During fieldwork at RNBM in September and December 1995, we (principally B.L.) captured six male *C. candicans* in presumed definitive plumage and a seventh *C. candicans* of a previously undescribed plumage. This seventh individual lacked any white in the wings and tail, but on the basis of structure, head pattern and overall



plumage tones, was clearly *C. candicans*. In addition, the biometrics of this bird fall within the range of that now known for *C. candicans* (see Appendix). The bird was caught in a small area of *campo sucio*—grassland with scattered shrubs and trees, the most common being dwarf palms *Butia paraguayensis*—with many anthills. All male *C. candicans* in definitive plumage caught and seen frequented this same area. No other caprimulgids were observed here.

The Paraguay observations revealed the extent of white in the wing of male *C. candicans* to be variable. Variation in the wing and tail patches of nightjars has been rarely considered (Forero & Tella 1997; although see Cramp 1985, Ingels & Ribot 1982, Jackson 1984), but, for one species (Red-necked Nightjar *Caprimulgus ruficollis*), has been shown to be age-related (Forero *et al.*, 1995). Male *C. candicans* exhibiting the maximum extent of white in the wing were assumed to be in definitive plumage.

Such males have blackish primary tips; white primary bases, secondaries, primary coverts and greater coverts (all fringed blackish); wholly white underwing except for blackish primary tips; white undertail and uppertail save for the central pair of rectrices; and white lower breast and belly. The species has a distinctive head pattern with pale greyish-brown forehead, crown and nape very finely barred and vermiculated dark brown. The central crown feathers are dark brown to blackish, barred with tawny, whilst the extreme sides of the crown are cinnamon finely barred brown. Extending from the base of the bill above the eye and just beyond is a fine whitish stripe, bordered on either side by cinnamon. The lores and ear coverts are dark chestnut barred blackish, forming a distinct dark eye patch. A distinctive feature is a broad whitish submoustachial stripe. In-hand photographs of a male in definitive plumage were published in Lowen *et al.* (1996a) and Tobias & Lowen (1996), with a field photograph in Lowen (1997).

### Description of the new plumage

The seventh (non-definitive male) individual was captured by BLL on 8 December 1995. It was considered unwise to collect the bird given uncertainty as to the species' local and global status. Feather samples were taken and have been deposited at the Museo Nacional de Historia Natural del Paraguay (Asunción). A full description was taken at the time of capture, and feather samples were subsequently compared to a table of colours (Smithe 1975). Colours mentioned in uppercase (e.g. "Burnt Umber") refer to feather samples compared directly to Smithe; colours in lowercase (e.g. "blackish") pertain to the original description. A description of the bird is as follows:

Bare part coloration as the captured males in definitive plumage: iris chestnut; periocular membrane cinnamon; upper and lower mandibles blackish with their bases flesh coloured; nostril protruberances also flesh coloured; legs and feet flesh with a grey tone; nails blackish.

Head pattern also much as the males captured, with centre of crown Burnt Umber, sides of crown greyish with indistinct fine black and



white markings. Ocular region dark cinnamon-rufous with whitish submoustachial line. Hindneck, mantle, back and wing-coverts Light Clay to Cinnamon with Drab fine spotting, barring and vermiculations. Base of scapular feathers similar, but towards tip Cinnamon with Dusky Brown spots along shaft and small white apical spot. Outermost primary Dark Greyish Brown. Second primary (numbered ascendantly) Dark Greyish Brown with six equally spaced Cinnamon spots on each web, forming transverse bars, a pattern repeated over the remaining primaries and all the secondaries and tertials. The four outermost primaries with inconspicuous small white terminal spots. Prominent emarginations to second, third and fourth primaries. Central rectrices Drab and with slight Dark Raw Umber bars. Outer rectrices with equally spaced Dusky Brown and Cinnamon bars. Undertail similar in pattern but paler. Throat dark cinnamon-rufous contrasting with the rest of the underparts. Foreneck and flanks Cinnamon with fine Dark Greyish Brown bars. Breast similar but with feathers tipped white, thus forming small whitish spots. Belly, vent and undertail coverts white. Thighs light cinnamon contrasting with the rest of the lower underparts.

The bird showed signs of neither moult nor feather wear, appearing to be in very fresh plumage. Given that it was caught at what is likely to be towards the end of the breeding season in Paraguay (López Lanús *et al.* in prep.), the bird would thus appear to be an immature. The exact shape of the outer primaries and rectrices of caprimulgids is a reliable indicator of their age, with adults exhibiting broad feathers with rounded tips whilst those of immatures are narrow and pointed, often with pale tips to the primaries (N. Cleere *in litt.* 1996, RPC pers. obs.). Sample outer rectrices and primaries were relatively narrow and pointed, indicating the bird to be an immature. The small white terminal spots to the outer four primaries (a feature not shown by males in definitive plumage) support this diagnosis.

The all dark outer primary (albeit with terminal white spot), contrasting with barred remaining primaries, is intriguing, since the remiges of immature Caprimulgids are generally uniform prior to moult (Cleere in press). However, since Caprimulgids (including the type specimen of *C. candicans*) moult primaries descendantly (Cleere in press), it seems unlikely that the bird was in moult, exhibiting new, adult-type outermost primaries among otherwise immature remiges on both wings. The all dark outer primary of this bird thus appears to be typical of immature male *C. candicans*. The outer primary of males in definitive plumage is noticeably modified, apparently to aid production of the mechanical sounds that accompany display (López Lanús *et al.* in prep.). In this context, it is less surprising that the outer primary of immature males differs so markedly.

The plumage of adult female *C. candicans* has yet to be formally described, but apparent females have been discovered during 1997 fieldwork at RNBM (J. Mazar Barnett, D. Capper & R. Pople verbally 1997, RPC pers. obs.). Neither these birds, nor the immature collected in the mid 1820s (sex unknown, but possibly female; Cleere in press), show white underparts, and cinnamon bands extend across all the



primaries in both (J. Mazar Barnett, D. Capper & R. Pople verbally 1997, RPC pers. obs., Cleere in press). The largely white underparts and dark outer primary—characteristics common to males in definitive plumage and to the 1995 individual described here—would indicate this new plumage to be that of an immature male.

### Conclusions

On the basis of head pattern, overall plumage tones, bare part coloration, structure and biometrics, this plumage clearly corresponds to *C. candicans*. Several factors allow the diagnosis of this plumage as that of an immature bird, perhaps most likely an immature male. Surveys in what remains of the optimal habitat of the species (apparently relatively open *campo sucio*) throughout its range are urgently needed to assess its true status.

### Acknowledgements

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### References

- de Azara, F. 1802–05. *Apuntamientos para la Historia Natural de los Pájaros del Paraguay y Rufo de la Plata. Vol. 1 and 2*. Imprenta de la Viuda de Ibarra, Madrid.
- Cleere, N. 1998. *Nightjars* Pica Press, Sussex.
- Collar, N. J., Crosby, M. J. & Stattersfield, A. J. 1994. *Birds to Watch 2: the world list of threatened birds*. BirdLife International, Cambridge.
- Collar, N. J., Gonzaga, L. P., Krabbe, N., Madroño Nieto, A., Naranjo, L. G., Parker, T. A. & Wege, D. C. 1992. *Threatened birds of the Americas: the ICBP/IUCN Red Data Book (Third Edition, Part 2)*. International Council for Bird Preservation, Cambridge.
- Cramp, S., ed. 1985. *The birds of the western Palearctic, Vol. 4*. Oxford University Press, Oxford.
- Davis, S. & Flores, E. 1994. First record of White-winged Nightjar *Caprimulgus candicans* for Bolivia. *Bull. Brit. Orn. Cl.* 114: 128–129.
- Forero, M. G., Tella, J. L. & García, L. 1995. Age-related evolution of sexual dimorphism in the Red-necked Nightjar (*Caprimulgus ruficollis*). *J. Orn.* 136: 447–451.
- Forero, M. G. & Tella, J. L. 1997. Sexual dimorphism, plumage variation and species determination in nightjars: the need for further examination of the Nechisar Nightjar *Caprimulgus solala*. *Ibis* 139: 407–409.
- Hayes, F. E. 1995. *Status, distribution and biogeography of the birds of Paraguay*. American Birding Association: Monog. Field Orn. 1.
- Ingels, J. & Ribot, J. H. 1982. Variations in the white markings of the Blackish Nightjar *Caprimulgus nigrescens*. *Bull. Brit. Orn. Cl.* 102: 119–122.
- Jackson, H. D. 1984. Key to the nightjar species of Africa and its islands (Aves: Caprimulgidae). *Smithersia* 4: 1–5.
- López Lanús, B., Clay, R. P., Lowen, J. C., Mazar Barnett, J., Madroño, N. A., Pearman, M. & Tobias, J. A. In prep. The display of the White-winged Nightjar *Caprimulgus candicans* with notes on its ecology.



- Lowen, J. C. 1997. Projects Canopy '92 and Yacutinga '95. *World Birdwatch* 19: 18.
- Lowen, J. C., Bartrina, L., Brooks, T. M., Clay, R. P. & Tobias, J. A. 1996a. Project YACUTINGA '95: Bird surveys and conservation priorities in eastern Paraguay. *Cotinga* 5: 14-19.
- Lowen, J. C., Bartrina, L., Clay, R. P. & Tobias, J. A. 1996b. *Biological surveys and conservation priorities in eastern Paraguay*. CSB Conservation Publications, Cambridge.
- Lowen, J. C., Clay, R. P., Mazar Barnett, J., Madroño N., A., Pearman, M., López Lanús, B., Tobias, J. A., Liley, D. C., Esquivel, E. Z., Reid, J. M. & Brooks, T. M. 1997. New and noteworthy observations on the avifauna of Paraguay. *Bull. Brit. Orn. Cl.* 117: 275-293.
- Smithe, F. B. 1975. *Naturalist's Color Guide*. The American Museum of Natural History, New York.
- Tobias, J. & Lowen, J. 1996. Strange-tailed Tyrants and White-winged Nightjars. *Birding World* 9: 361-363.

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#### APPENDIX

Measurements of *Caprimulgus candicans* at RNBM, September/December 1995 & July 1997.

Mean, followed in parentheses by range, standard deviation (SD) and sample size (n); and separated by a comma from data for the immature plumage described in this note. The measurements of this bird are excluded from the mean, range and standard deviation calculations. All measurements are in millimetres, apart from weight in grams.

Weight 49.3 (52-46, SD 2.66, n=6), 45; Wing chord 148 (145-150, SD 1.94, n=6), 149; Maximum flattened wing 151 (146-154, SD 2.19, n=7), 150; Tail (from base of central rectrices) 104 (98-107, SD 3.69, n=6), 93; Tarsus (to extreme rear of joint) 24.9 (24.1-25.8, SD 0.6, n=6), 25; Culmen (from anterior of nostrils to tip of bill) 6.5 (6.3-6.6, SD 0.1, n=5), 5.7; Bill width (at posterior edge of nostrils) 5.7 (5.3-6.0, SD 0.25, n=5), 5.4.

#### IN BRIEF

### The eggs of the Pink-headed Duck

by Michael Walters

Received 7 July 1997

In his paper on the phylogeny of the pochards, Livezey (1996) uses a large number of morphological characters to create a new phylogeny which, among other things, regards the extinct Pink-headed Duck *Rhodonessa caryophyllacea* as forming a duotypic genus with the Red-crested Pochard *Netta rufina*. Among the related characters considered, Livezey includes nest site and clutch size, but not egg shape, size or colour. Shape and size are readily available from Schönwetter (1960). Egg colour has had a bad press since Lack's (1958)